CURRENT LITERATURE.

House Plants as Sanitary Agents; or, the relation of growing vegetation to health and disease, comprising also a consideration of the subject of practical floriculture, and of the sanitary influences of forests and plantations. By J. M. Anders, M. D., Ph. D., etc. Philadelphia: J. B. Lippincott Co., 1887. 12°, pp. 334.

Dr. Anders is already known to many of our readers, through his papers on this subject in the *American Naturalist* and elsewhere. The present book is an amplification (we had almost said a diffusion) of those papers, with suitable changes and additions. The theses of the book are that house plants act as sanitary agents by (1) adding moisture to the air by transpiration; (2) producing ozone; (3) by their positive therapeutic value in certain diseases; (4) by their appeal to the æsthetic side of our nature. The latter claim no one will dispute. But it is not clear that house plants materially affect the quantity of ozone in the dwelling, nor do the experiments of the author at all demonstrate this. Indeed they seem to be rather indefinite, and read too much like experiments carried on to prove a previously assumed theory. Equally questionable also is the therapeutic value of ordinary house plants. The conclusions from the facts are not necessary ones, because of the innumerable opportunities for the action of other causes. It is well known how difficult it is to determine the therapeutic value of a substance administered directly; how much more to determine the value of one factor in a patient's environment!

We may concede the value of house plants in increasing the percentage of moisture in the air of a room, but it is questionable whether the effect of forests is appreciable in this direction. Indeed the whole question of the influence of forests on climate must be considered as yet problematical. Throughout the book the author has shown himself possessed by his subject, and he has ransacked every nook and corner to find support for his main idea. The reader must, therefore, estimate for himself the relative values of the authorities quoted, and must take with a grain of allowance many of the deductions.

Aside from slack proof-reading, the book is well manufactured.

Zur Systematik der Torfmoose, von Dr. Julius Röll in Darmstadt. Separat-Abdruck aus *Flora,* 1885, 1886. 8°. pp. 108.

We have already noticed the publication of this work as it appeared in *Flora* (see this journal, 1886, p. 127). It now appears as a reprint in pamphlet form, and unfortunately re-paged. We shall, in the next number, describe the original paging, so that those who have occasion to quote from it may not be confused by this alteration.

The author first establishes what can hardly be controverted, viz the great variability of the characters used for specific distinctions, and

insists that the peat-mosses (Sphagna) do not show either constant species or typical forms, the intermediate forms being of equal value with the so-called typical forms. Instead of the present so called species, he would therefore establish "form-series" (*Formenreihen*), which should be distinguished by the most easily recognizable characteristics. Since these distinctions between form-series would be at best conventional, he thinks they should be settled by a committee of sphagnologists.

The bulk of the paper is made up of the description and arrangement of such form-series as seem to him best characterized. Almost an infinite number of forms are recognized and described. For example: under *Sphagnum acutifolium* Ehrh. (*in part!*) are placed *twelve varieties and thirty-seven forms!* Now as a matter of biological research this is all very well, and it certainly shows exhaustive study on the part of the author, not only in the closet but in the field. But as a practical system of classification we can not see that it is a marked improvement upon previous works. Every systematist surely regards his species as a series of forms more closely related to each other than to those of another form-series. But few would hold that these forms are sufficiently fixed or permanent to be worth describing, and still fewer will believe that they are definite enough to be recognizable by others. And this last is the sole object of descriptive botany!

Catalogue of Canadian Plants. Part III.—Apetalæ. John Macoun, Dominion Botanist. Geol. and Nat. Hist. Survey of Canada.

This part completes the exogens and the first volume of this fine catalogue. The Gymnosperms are in their proper place, and the genus Salix (of which there is, of course, a large display of species) shows the help of Mr. Bebb, as do all the rest of the Apetalæ the assistance of Dr. Gray and Mr. Watson. A large portion of this part is taken up with additions and corrections to former parts, and a complete index places this volume in a most compact shape for use. Prof. Macoun is to be congratulated upon so successful a conclusion, and has the wishes of American botanists that the second volume may not be long delayed.

Die Formen der Bakterien und ihre Beziehungen zu den Gattungen und Arten. Von Dr. Ferdinand Hueppe. Wiesbaden: C. W. Kreidel. 1886. 8°. pp. 152. Illustrated.

It is as essential in bacteriology, as in other departments of natural science, to possess a solid morphological basis in order to accurately interpret physiological and biological data. So much study is at present devoted to questions of great pathological moment that utilitarian and scientific interests alike suffer for want of well established fundamental conceptions of the morphology of bacteria. In this work treating of "forms of bacteria and their relation to genera and species," the author proposes to suppy the need, so far as present information permits.

The work is dedicated to Drs. Ferdinand Cohn and Anton DeBary,

and historically is mainly concerned with the growth of bacterial concepts from the time of Cohn's *Untersuchungen* to DeBary's *Vorlesungen*, 1872 to 1886. A few words are given to the early history of the subject, beginning with Leeuwenhoek, the discoverer of bacteria (1675), after which the epoch-making classification of Cohn (1872) ushers in the discussion of the comparative value of natural-history species, form species and physiological species.

The readiness with which certain bacteria pass from one form to another early attracted attention, and shook the belief in specific distinctions, raising the question, if various forms were not simply phenomena of growth, and if all bacteria should not be relegated to a single species or genus. The subsequent idea of monomorphic and pleomorphic forms led to expansion of the bacterial concept, and reinstated the idea of the existence of genuine species. Variability, the modifications due to change of function and of food supply, the significance of zoögloea, the several classes of growth-forms, and the formation and germination of spores, successively receive attention, followed by a classification of genera on the basis of fructification, and a discussion of the phylogenetic relationship of bacteria.

Such in brief is the outline of the work. Only a consultation of the work itself, however, can adequately reveal the full yet careful handling which the subject has received. It is an excellent treatise, and will prove a welcome one to a wide circle of readers and students.

NOTES AND NEWS.

TSUGA CAROLINIANA Eng. is figured in *Gardeners' Chronicle*, December 18, 1886.

MR. MATSUMURA, professor of botany in the Imperial University of Japan, is a pupil of Dr. Sachs.

WE ARE ABLE to give, in the present number, a short account of Dr. Wigand as a botanist and teacher, from the pen of one of his pupils.

DR. T. J. W. BURGESS has published in a quarto pamphlet of 10 pages (reprinted from Trans. Roy. Soc. Canada), recent additions to Canadian Filicineæ.

A NEW WORK on the "Fresh-water Algæ of the United States," by Rev. Francis Wolle, is in press. It will contain 150 plates, with over 2,000 figures.

THE CELERY FUNGUS (Puccinia bullata), during this last autumn, has been very prevalent in parts of England, in some cases every plant in a market garden being swept off by it.

DR. CHAS. E. BESSEY describes (*Am. Nat.*, Dec., 1886,) Psoralea tenuiflora as "another tumble-weed," occupying "ditches by the side of the railway," in S. Nebraska, in great masses.

DR. PAUL MORTHIER, of Neuchâtel, Switzerland, is dead. He was the founder of the Swiss Botanical Society, and has had the honor of being remembered in a familiar genus of fungi.